Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 25 of the Commission's Rules	)	
to Establish Rules and Policies Pertaining to	)	IB Docket No. 96-220
the Second Processing Round of the	)	
Non-Voice, Non-Geostationary Mobile Satellite	)	
Service	)	

REPLY COMMENTS OF GE-STARSYS GLOBAL POSITIONING INC. AND GE AMERICAN COMMUNICATIONS, INC.

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SUMMARY

GE-Starsys Global Positioning Inc. ("Starsys") and GE American Communications, Inc. ("Americom") submit that the record in this proceeding supports our main arguments: First, whether the Commission adopts its originally proposed plan for three new Little LEO systems or one of the alternative system configurations advocated by the parties, it should ensure that new applicants avoid harmful interference to Starsys's currently authorized spectrum usage. Second, the Commission must not exclude Starsys's modest request for non-exclusionary use of feeder link spectrum in the second round. Third, the Commission should facilitate future growth by first round and second round parties by ensuring that those parties have priority to use additional spectrum that was allocated at WRC-95, and that may be allocated at the upcoming WRC-97. Finally, the Commission should follow the consensus of the parties and avoid using auctions in the satellite context.

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REPLY COMMENTS OF GE-STARSYS GLOBAL POSITIONING INC. AND GE AMERICAN COMMUNICATIONS, INC.

GE-Starsys Global Positioning Inc. ("Starsys") and GE American Communications, Inc. ("Americom") hereby submit their reply to the comments of other parties regarding the Commission's Notice of Proposed Rulemaking in the above-captioned proceeding, FCC 96-426 (released Oct. 29, 1996) ("Notice").

INTRODUCTION

This proceeding is critically important to Starsys as it moves forward with its plans to develop Little LEO service in this country and around the world. We are sympathetic to the interests of new Little LEO applicants who also want to participate in this infant service. At the same time, the Commission will recognize that Starsys has been working actively to develop NVNG MSS for many years. A fundamental problem through this period has been to obtain spectrum and coordinate its use. As the Commission is aware, we have overcome numerous

obstacles over the years to: (a) help obtain allocation of even the limited spectrum available to date; (b) coordinate with other first round parties in the negotiated rulemaking; (c) deal with further coordination requirements that have impacted our system design and its capacity, such as those related to the French S80-1 system, modifications of the Orbcomm system, and the needs of other spectrum users such as NOAA; and (d) work towards identification and allocation of additional NVNG spectrum for Starsys and other parties in WRC-95 and the upcoming WRC-97.

In these circumstances, the Commission necessarily must balance the interests of those proposing additional systems with those of first round licensees. Americom's decision to withdraw its second round application accommodates NVNG spectrum limitations and the concerns expressed in the Notice. At the same time, we strongly submit that the second round rules adopted here must not damage the legitimate needs of licensees who have been taking the lead on Little LEO service for so long. It would be ironic and unfair if decisions made here undercut the ability of Starsys, Orbcomm and VITA to develop their systems just as those systems are beginning to take shape. 1/

Starsys has made clear that it does not object to licensing of additional qualified second round applicants as spectrum permits. As discussed below, however, the Commission's "balancing of interests" among the parties must reflect the following principles:

1/ In light of the comment of Leo One, Leo One Comments at 1 n.2, Starsys notes for the record that it has met the construction commencement deadline in its authorization.

First, any new systems must operate in ways that do not cause harmful interference to licensees. Starsys is willing to coordinate with other parties, but it should not be forced to accept material interference that would further affect system operation beyond the significant impacts imposed by industry frequency sharing, domestic restrictions and coordination, and international coordination.

Second, Starsys should be granted non-exclusionary use of the 50 kHz channel that the Commission deferred to this round. That request does not impact the ability of other second round parties to use the same spectrum for mobile terminal service links.

Third, any rules adopted with respect to use of spectrum allocated at WRC-97 and beyond should include an opportunity for first round licensees to meet legitimate spectrum expansion requirements. This principle is equitable given the heavy and long term involvement of current licensees in those processes, and the spectrum compromises they have had to accept to date. This additional spectrum also should be used to complete spectrum requirements of other second round systems before applications from new parties are permitted. Rules with respect to spectrum at later WRCs should be deferred at this time.

Starsys also addresses other matters briefly here, such as our strong opposition to the use of auctions to resolve satellite application proceedings. We are in full agreement with the other commenters in this regard. We also agree with those commenters who oppose a rule requiring position determination capability for

ground terminals, and who support rules restricting exclusive agreements with other countries. These matters are discussed further below.

I. THE COMMISSION SHOULD ENSURE THAT NEW APPLICANTS AVOID HARMFUL INTERFERENCE WITH THE STARSYS SYSTEM.

As the Commission licenses additional NVNG MSS systems to increase competition for the services Little LEOs can provide, it is critical that the Commission avoid causing technical harm to systems that have already been licensed, such as Starsys. If a new system impairs the functioning of a previously authorized system and interferes with its ability to provide service, then the Commission's pro-competitive goals will not be achieved.

Although we are not taking a position on the specifics of the three systems proposed by the Commission in the Notice, we applaud the Commission's careful work in devising these new spectrum choices so as to minimize harmful interference to Starsys's system. In our initial comments, we raised certain technical concerns about the proposed systems. 2/ But as a general matter, we support the Commission's efforts to maximize use of the limited available spectrum.

2/ In particular, we pointed out that any licensee operating in the 137-138 MHz band will have to conduct a sharing evaluation on the impact of transmissions on the Starsys system. We also argued that if Orbcomm service link channels need to be relocated, they should be shifted to the NOAA channels at 137.333-137.367 MHz and 137.753-137.787 MHz, rather than to the NOAA channels at 137.485-137.515 MHz and 137.605 and 137.635 MHz, where they would cause harmful interference to Starsys's signal at 137.5 MHz. See GE Starsys/GE Americom Comments at 18-21.

We are seriously concerned, however, about the modifications to these systems that some parties have suggested. Some of these proposals could have serious adverse effects on the Starsys system. As a general matter, Starsys is certainly willing to coordinate with other systems. We have no objection to sharing spectrum, or to operating in close proximity with other systems, when it is technically feasible to do so. 3/ But any such sharing must be coordinated carefully, and the Commission must exercise care in minimizing the possibility of harmful interference between systems. In cases where sharing is not technically feasible, the Commission should recognize the prior claim of Starsys to the spectrum in which it is currently licensed.

First, Final Analysis suggests alternative system configurations to those proposed in the Notice; two of those alternatives could operate in the 137.485-137.515 MHz downlink spectrum. 4/ This channel lies astride the centerline of the Starsys downlink feeder link. Any licensee operating in that channel must be required to avoid causing harmful interference to the Starsys downlink, either by

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3/ Contrary to Final Analysis's representations, see Final Analysis Comments at 20-21, we believe that coordination between the Commission's proposed Little LEO-2 system and other users of the 137-138 MHz downlink band is feasible. Sharing would be required only with those systems in the specific location of the frequency division multiple access ("FDMA") downlink channels, plus the spread-spectrum systems such as Starsys. It is likely that the effective outage due to the overlapping NOAA footprints is somewhat less than Final Analysis projects, and that the incidence of outages in any given geographic area would be considerably less than the 35% rate suggested by Final Analysis.

4/ Final Analysis Comments, Exhibit 3 ("Spectrum Sharing Proposals") at 2, 3 (proposed PS1-1D and PS2-1D systems).

avoiding transmissions or by using very low power levels when operating in the main beam of a Starsys satellite ground station antenna.

Second, Orbcomm suggests that the Commission's proposed System 2 could "operate its subscriber uplinks in the lower portion of the 148.0-149.9 MHz band where Starsys will be operating its spread spectrum uplinks without causing harmful interference to Starsys," and other parties make similar suggestions. 5/ We are seriously concerned about authorization of an additional system in this band, and we would strongly urge that, as proposed by the Commission, no additional system be authorized to use this uplink spectrum. The US has already conducted initial coordination with France for the S80-1 system, making two spread-spectrum systems in the same uplink band, thereby requiring significant capacity sharing in common locations. A third full system in the band would have the effect of further reducing Starsys's capacity from the amount needed and originally authorized.

However, if the Commission were to authorize an additional system to operate in this band, it must only be done under conditions which avoid harmful interference with the Starsys system. It may be possible for a third spread-spectrum system to partially share this band subject to successful coordination based on channel location, power levels, code sharing (or avoidance), and other

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5/ Orbcomm Comments at 42. See also Leo One Comments, Appendix B at 11 (suggesting a System B, which could require a code division multiple access ("CDMA") uplink to be shared with Starsys in this spectrum); Final Analysis Comments, Exhibit 3 ("Spectrum Sharing Proposals") at 2, 4 (suggesting alternative system, PS1-1U and PS2-1U, that would use uplinks in this band).

operational characteristics. Such sharing would be acceptable only if the additional MSS system utilizes spread-spectrum modulation with user terminals having no more than the same power output as Starsys's terminals, and if the channel is well offset from the Starsys channel centerline.

With the restrictions imposed on Starsys' operations in the 148.0-148.905 MHz band and the additional impact of an S80-1 system sharing the spectrum, additional sharing with a system using frequency division multiple access ("FDMA") technology in the same band cannot be tolerated. An FDMA system's uplink transmitters operate at much greater power than the two watts authorized for spread spectrum mobile terminal transmissions in this band. The additional interference produced by multiple narrowband, FDMA MSS user terminals attempting to share this same uplink spectrum would cause unacceptable interference to Starsys's uplink signals, resulting in significant capacity losses. 6/ A second effect is also of concern: an additional number of FDMA transmitters in the band could saturate the capacity of the satellite filter, leaving the system vulnerable to the untreated interference effects of those terminals and other interference.

6/ The 148.0-148.905 MHz band spectrum is shared with a number of high-power fixed and mobile ground-based transmitters that combine to create a severe noise environment for the Starsys signals from our mobile terminals. A frequency-domain adaptive filter ("FDAF") on board the Starsys satellite helps to mitigate the effect of high powered narrowband jammers by selectively attenuating them (along with small portions of the desired signal). While operation of the FDAF gives Starsys a net increase of carrier-to-noise density on this link, the interference-reducing effect of the FDAF would not be enough to mitigate the problems caused by a number of FDMA transmitters in the band.

In the end, the Commission will have struck the wrong balance if it authorizes new NVNG systems to cause harmful interference to current licensees. The coordination to date has strained the Starsys system to the limits of acceptable interference. Thus, an increase in harmful interference would upset the legal and equitable rights of licensees. More important, it would degrade the ability of licensees to serve the public. Any rules adopted here must avoid that outcome.

II. STARSYS'S REQUEST FOR NON-EXCLUSIONARY SPECTRUM USE MUST BE GRANTED IN THE SECOND ROUND.

Starsys's pending application in the second round seeks non-exclusionary use of 50 kHz of spectrum for feeder links in the uplink direction in the 149.9-150.05 MHz band. Granting this request would not preclude the licensing of new users in the same spectrum. 7/ Rather, allocating this spectrum for non-exclusive use by Starsys would promote competition by strengthening an existing competitor without precluding additional entry.

Each of the parties that opposed permitting first round licensees to participate in the second round failed to recognize this essential feature of Starsys's non-exclusionary application. Indeed, all of these parties' arguments are based on the proposition that permitting first round licensees to participate in the second

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7/ Indeed, we believe that an additional competitor could also operate a 50 kHz feeder link in the same 149.9-150.05 MHz band. Such a system, Starsys, and the French S80-1 system all could operate feeder links in that band on a non-exclusionary basis with geographical coordination. Because this spectrum at 149.9-150.05 MHz can be used for feeder links on a non-exclusionary basis, GE Starsys recommends that the entire 150 kHz be considered for allocation to NVNG MSS below 1 GHz in the US. See GE Starsys/GE Americom Comments at 21-22.

round would reduce the amount of spectrum available to new licensees. This proposition is baseless with respect to the Starsys system.

For example, the economic analysis of Leo One's consultant is fundamentally flawed with respect to Starsys by his assumption that awarding any additional spectrum to first round licensees would preclude entry by new licensees. 8/ Similarly, Final Analysis argues that the Commission should "exclude first round licensees to promote competition in Little LEO markets" because of the need for more competitors in the NVNG MSS market. 9/ And CTA contends that limiting eligibility to new applicants would make it more likely that the Commission could "avoid a situation of mutually exclusive applications." 10/ Each of these parties fails to recognize that granting Starsys's request for non-exclusionary use of 50 kHz of spectrum would not be inconsistent with additional entry by any other applicant. 11/

In sum, no party has submitted any information or arguments that refute the point made in our initial comments -- that it would be arbitrary and capricious for the Commission to summarily exclude Starsys's application from the

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8/ Mr. Warren-Boulton equates "entry into this market" with "restricting the award of licenses in this round to new entrants." Leo One Comments, Attachment A (Warren-Boulton Affidavit) at 3.

9/ Final Analysis Comments at 4.

10/ CTA Comments at 2.

11/ The same analysis applies to the additional non-exclusionary 50 kHz feeder link spectrum sought by Orbcomm.

second round. The arguments that parties have made regarding exclusion of first round licensees from the second round are relevant only to the applications of Orbcomm and VITA, each of whom seeks in the second round to substantially increase the spectrum to be used exclusively by their respective systems. For example, Orbcomm seeks authorization for 12 additional satellites and 90 kHz additional spectrum in the 137-138 MHz band.

Not only is Starsys's proposed use non-exclusionary and consistent with the licensing of additional systems, Starsys also has an equitable right to participate in the second round and has a legitimate need for the spectrum. As we pointed out in our initial comments, Starsys sought this spectrum before any of the first round licenses were granted, in response to an implicit invitation by the Commission, and this portion of the application was deferred to the second round for procedural reasons. 12/ Moreover, subsequent to the submission of Starsys's initial application and the Negotiated Rulemaking, a combination of Commission decisions and other developments substantially affected Starsys's ability to operate, and increased the importance to Starsys of the requested non-exclusionary feeder link spectrum: 13/

12/ GE Starsys/GE Americom Comments at 4-5 (citing Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed-Satellite Service and the Mobile-Satellite Service for Low Earth Orbit Satellites, 8 FCC Rcd 1812, 1816 (1993); Application of Starsys Global Positioning, Inc. for Authority to Construct a Satellite System in the Non-Voice, Non-Geostationary Mobile Satellite Service, 11 FCC Rcd 1237 (Int'l Bur. 1995)).

13/ See GE Starsys/GE Americom Comments at 5-7.

- The Commission's decision to reduce the power and duty cycle of the mobile terminals in the uplink band to two watts per terminal 14/ causes smaller than desired link margins on the satellite downlink channel to the ground station. Another decision imposed on spread-spectrum systems is a duty cycle that is one-quarter of that allowed FDMA systems in the same band.

- Coordination with NOAA in the 137-138 MHz band limited the satellites' output power to levels that allow only a minimal link margin to the Starsys system. 15/

- As a result of formal negotiations with France, Starsys must share with another worldwide spread-spectrum system in the same band.

- The change in Orbcomm's constellation from 20 to 36 satellites, their rechannelization, as well as the relocation of some Orbcomm channels closer to the Starsys centerline due to coordination with NOAA and the Russian METEOR system, significantly increased the occasions of interference from the Orbcomm satellites into the Starsys ground station antennas over what was anticipated when the Negotiated Rulemaking was conducted in 1992.

For all of these reasons, the Commission should process Starsys's request for nonexclusionary use of 50 kHz in this round, as it said it would in deferring the request from the first round application. This action will not adversely impact other parties, and will improve the ability of Starsys to serve its customers. In that regard, we strongly disagree with Final Analysis's assertion

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14/ Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile Satellite Service, 8 FCC Rcd 8450 (1993).

15/ Starsys hopes that the relocation of NOAA satellites from the center of the band will allow improved power levels for Starsys downlinks which will also benefit the sharing FDMA LEO MSS systems in the band.

that "at least 50 kHz of spectrum per satellite in each direction (and approximately 150 kHz per constellation, in each direction, because of multiple overlapping satellites) must be dedicated on an exclusive basis to feeder link operations in a Little LEO system." 16/ We believe that one 50 kHz feeder link channel in each direction can suffice for each constellation, recognizing that occasionally the system may have to time-share its own channel availability when serving multiple satellites at the same time. Final Analysis should consider the use of time division multiple access ("TDMA") within a system to use one downlink feeder link channel per system effectively. More broadly, notwithstanding Final Analysis's claims, 17/ given the non-geostationary nature of Little LEO satellites, all Little LEO systems will be required to share with other systems operating in the same uplink bands. Our request for non-exclusionary use of the 50 kHz channel is consistent with this principle.

III. THE COMMISSION SHOULD ENSURE THAT FIRST AND SECOND ROUND PARTIES HAVE ACCESS TO ADDITIONAL SPECTRUM ALLOCATED AT WRC-95 AND WRC-97.

The Commission should make available spectrum that was allocated at WRC-95, and that may be allocated at WRC-97, to first and second round parties, including Starsys. Any rules adopted here should give priority to these parties to complete and expand their systems; potential new system applications should only be accepted afterwards. Furthermore, the Commission should defer adoption of

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16/ Final Analysis Comments at 16-17.

17/ Id. at 17-18.

rules for spectrum that may be allocated at WRC-99 and beyond. Those rules would be premature until more is known regarding the development of this new service.

As discussed below, this approach serves the public interest given the extremely unusual circumstances of NVNG MSS -- particularly (a) the slow, incremental way that spectrum for this service has become available, and (b) the extensive resources that the first and second round parties have devoted to assist in the spectrum development process. Like Starsys, other commenters recognize these unusual factors and argue that they should influence the rules adopted here.

Starsys suggests that the Commission adopt rules that reflect the following application procedures:

1. Non-exclusionary use of currently authorized spectrum, such as the 50 kHz feeder link requested by Starsys, will be authorized now.

2. Additional systems will be approved using the remaining WRC-92 and WRC-95 spectrum as possible based on the system designs developed in this rulemaking and/or a settlement among the second round parties that are not affiliated with first round licensees.

3. Priority for WRC-97 spectrum will be given to expansion of first round and second round licensee systems. These parties may apply for such spectrum after WRC-97, demonstrating how such spectrum would be used in their systems, and why they need additional spectrum to satisfy customer requirements. 18/ After the Commission has processed these applications, a processing round could be held in which new parties could request any remaining spectrum.

4. The Commission would expressly defer promulgation of rules that would apply to spectrum set aside at later WRCs.

18/ The rules could specify that such applications would be due within 90 days of completion of the Commission's rulemaking implementing WRC-97. This would give first and second round systems a reasonable priority for additional spectrum, and allow the Commission to meet such expansion requirements relatively quickly.

GE Starsys recognizes that it would be somewhat unusual to establish qualification and priority rules in this fashion. However, these procedures are appropriate in the special circumstances of NVNG MSS. First of all, this service is different from most others in that spectrum has become available through a rolling process of minor spectrum allocations over a period of years. The Commission might have chosen to withhold any authorizations until after it had a "critical mass" of spectrum, delaying any Little LEO licensing into the future. Instead, the Commission has chosen to license what little spectrum it has, as it gets it, while the current parties help to get more. Starsys supports this process, but fairness to the parties requires that the parties that have relied on the "get some now, get more later" licensing in fact receive the opportunity that their risk-taking initiative have earned. This is all the more true given that even the limited spectrum licensed to date has been burdened by the unanticipated coordination requirements noted above. For all these reasons, it is necessary and appropriate for the Commission to grant a priority for systems to expand and become more "complete" before opening a processing round in which new system applicants could be considered.

Second, and related, rules giving a priority to first and second round parties would properly recognize their significant role in helping obtain these gradual allocations of NVNG spectrum. Starsys and Orbcomm were active at WARC-92, and the second round parties as a group expended substantial resources in helping the United States obtain additional spectrum for the Little LEO service at WRC-95. These efforts are continuing for WRC-97. For its part, Starsys has

worked on sharing studies in preparation for WRC-97, including the sharing studies for the 149.9-150.05 MHz band and for radioastronomy sharing in bands below 1 GHz, and is an active participant in at least three additional ongoing spectrum sharing efforts.

In these circumstances, the Commission would thwart the public interest if it adopted rules that would permit free-riding latecomers to benefit at the expense of those whose dedication and investment helped the Commission to obtain new spectrum. This is all the more true given the constraints on the amount of spectrum available for initial authorizations. There is a consensus on this point among the commenting parties. 19/

The Commission can bound this "priority" procedure to avoid warehousing. System operators should be required to show that they have a legitimate need for the spectrum to meet service requirements. At this point the Commission does not need to specify how that showing should be made. Relevant factors would likely include how an operator is making use of the spectrum it has already received, how much additional spectrum it requires, coordination requirements for that spectrum, and other matters that may become clearer as NVNG MSS systems are deployed and become fully operational in the market.

This procedure also has the benefit of putting all system operators on essentially the same footing with regard to WRC-97 spectrum. First and second

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19/ See, e.g., GE Starsys/GE Americom Comments at 12-14; CTA Comments at 26-27; E-Sat Comments at 15; Final Analysis Comments at 29-35.

round applicants will all be able to evaluate the spectrum that becomes available and apply for it in a concrete fashion based on their actual needs and system parameters. In contrast, for example, the second round application of VITA bears no relationship to its subsequently authorized system and lacks an adequate showing of need. Similarly, Orbcomm's second round application requesting additional spectrum in the 137-138 MHz band has been followed by its own rechannelization, the reallocation of the NOAA channels, and other developments.

The procedures set forth here would avoid the arbitrary result of giving any priority to current applicants for spectrum that was not on the table at the time of the second processing round notice. We note that Starsys certainly would have filed an application by the second round cut-off if it had notice that such an application was necessary to protect its rights to expansion capacity from future WRCs. Other second round applicants also might have made different filings. The "priority" rule we propose most fairly permits the current parties to expand and fill out their initial systems as this decade's WRCs gradually create a pool of spectrum to meet the basic requirements of these systems.

Some parties self-servingly suggest that first round licensees should not be eligible for any additional WARC-92, WRC-95, or WRC-97 spectrum until other parties that receive licenses in the second round "realize their full competitive potential." 20/ For all the reasons discussed above, we strongly disagree. Starsys has had to make compromises to deal with the limited frequencies available and the

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20/ Final Analysis Comments at 29.

coordination that has been required. We are looking towards WRC-97 as an opportunity to obtain additional spectrum that we can use to make our service more robust. We assume that Orbcomm and VITA similarly may need additional spectrum in the future assuming that their current second round requests for substantial expansion are dismissed or deferred. The Commission must ensure that Starsys and other licensees in the NVNG MSS have access to additional spectrum that becomes available to accommodate future growth. This is critical to enable Starsys to realize its competitive potential and satisfy expected demand for our MSS service. Our active involvement in the WRC process is demonstrative of our need for additional spectrum. The Commission should not adopt rules here that would penalize us for taking the initiative with respect to the initial limited spectrum available in this unusual "rolling" spectrum allocation process. 21/

Finally, the Commission should defer a decision now as to whether the "priority" rules we propose should apply to spectrum allocated at WRC-99 or beyond. It is premature to make such decisions now without knowing the outcome of WRC-97, including the amount of spectrum that becomes available and the associated coordination requirements. Other factors also may be relevant, such as the extent that NVNG MSS systems of other nations impact the availability of WRC-97 spectrum for US systems. For all of these reasons, the Commission should

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21/ The unique circumstances of NVNG MSS spectrum allocation ensure that the "priority" rule we propose would not set a precedent for other radio services.

limit its decision here to spectrum that is available through implementation of WRC-97.

IV. THE RECORD DOES NOT SUPPORT USING AUCTIONS IN THE SATELLITE SERVICE CONTEXT.

There is a consensus among the parties filing comments in this proceeding that the use of auctions to resolve the second NVNG processing round would not serve the public interest. 22/ Auctions here could lead to sequential satellite auctions in other countries, making it difficult or impossible for US licensees to obtain licenses in other countries and to coordinate and share spectrum with other countries, and substantially increasing the risks and costs associated with investment in satellite services.

This is a fundamental point for Americom and Starsys. The Commission should not mistake our decision not to restate here our arguments and those of the industry as in any way reflective of the importance of this matter. Auctions of global satellite spectrum are bad public policy. Moreover, auctions are not needed in NVNG MSS because, once other rules are clarified in this proceeding, we believe that the applicants will be able to negotiate a settlement. Alternatively, a negotiated rulemaking procedure could successfully resolve any outstanding issues. However, if mutual exclusivity remains at the end of the day, even after

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22/ See, e.g., GE Starsys/GE Americom Comments at 22-26; CTA Comments at 28-32; Final Analysis Comments at 35-42; Leo One Comments at 60-61; Orbcomm Comments at 46-53. But see Leo One Comments at 62-65 (supporting use of auctions as a last resort)

WRC-97, then the Commission should make selections based on its established standards, and should avoid satellite spectrum auctions for this service.

V. OTHER ISSUES

Every party that addressed the issue has agreed that position determination capability should not be required on ground terminals. 23/ Such a requirement would increase costs to customers, and would unnecessarily consume capacity.

Finally, as proposed in the Notice, the Commission should restrict licensees' ability to enter exclusive arrangements with other countries for communications to or from the United States. 24/ Such exclusive dealing would be inconsistent with the Commission's pro-competitive goals, and with other steps the Commission has taken recently to promote competition for international telecommunications services.

CONCLUSION

Starsys urges the Commission to resolve the issues in this proceeding such that: (1) new systems do not cause harmful interference to existing licensees; (2) Starsys receives non-exclusionary use of the 50 kHz channel that the

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23/ See, e.g., GE Starsys/GE Americom Comments at 27-28; Final Analysis Comments at 49; Leo One Comments at 66-69; Orbcomm Comments at 54-57.

24/ See, e.g., GE Starsys/GE Americom Comments at 29; Final Analysis Comments at 50; Leo One Comments at 69; Orbcomm Comments at 57-58. But see CTA Comments at 34 (opposing limitations on exclusive arrangements).

Commission deferred to this round; and (3) first round licensees have an opportunity to meet legitimate spectrum expansion requirements using spectrum allocated at WRC-95 and WRC-97.

Respectfully submitted,

GE STARSYS GLOBAL POSITIONING, INC. AND GE AMERICAN COMMUNICATIONS, INC.

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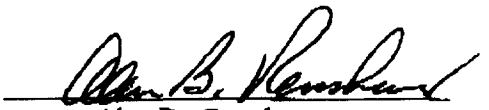
January 13, 1997

DECLARATION OF ALAN B. RENSHAW

I, Alan B. Renshaw, hereby certify under penalty of perjury that I am the technically qualified person responsible for preparation of the technical information contained in the foregoing Reply Comments, that I am familiar with the technical requirements of Part 25; and that I either prepared or reviewed the technical information contained in the Reply Comments and that it is complete and accurate to the best of my knowledge, information and belief.

Executed on January 13, 1997



Alan B. Renshaw
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CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of January, 1997, I caused to be served by hand delivery, copies of the foregoing Reply Comments of GE Starsys Global Positioning Inc. and GE American Communications, Inc., addressed to the following:

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